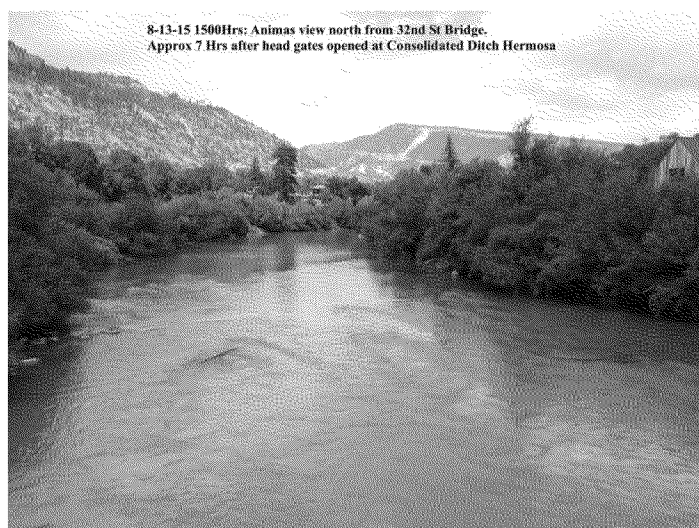


**U.S. ENVIRONMENTAL PROTECTION AGENCY  
POLLUTION/SITUATION REPORT  
2015 Gold King Mine Release SITREP**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region 8**



**Subject:** Situation Report #6  
Gold King Mine Release  
San Juan County, CO  
Latitude: 37.8945 Longitude: -107.6384

**From:** Durango Unified Command (Situation Unit)

**Date:** 08/14/2015

**Reporting Period:** 08/13/2015 through 08/14/2015

**Website:** [epa.gov/goldkingmine](http://epa.gov/goldkingmine)

**New information from current operational period and projected activities for next operational period are in bold text.** Historical information is in plain text.

## Executive Summary

On August 5, while investigating the Gold King Mine in Colorado, an EPA cleanup team triggered a release of mine wastewater into Cement Creek. The EPA is working closely with responders and local, state and tribal officials to monitor water contaminated by the release. The release's path flows through three of the EPA's regions - Region 8 (Colorado, Utah, Southern Ute Tribe, and Ute Mountain Ute Tribe); Region 6 (New Mexico), and Region 9 (Navajo Nation). The EPA has activated its Emergency Operations System to ensure coordination among its regions, laboratories and national program offices in Washington, D.C. A Unified Command has been established in Durango CO, which includes the EPA, State of Colorado Office of Emergency Management (OEM), Southern Ute Indian Tribe, La Plata County, and San Juan Basin Health Department. The EPA has established an Area Command in Durango CO, and is coordinating with EPA Regions 8, 6 and 9 as well as officials in Colorado, New Mexico, Utah, the Southern Ute Tribe, the Navajo Nation and the Ute Mountain Ute Tribe

## 1. Introduction

### 1.1 Background

**Site Number:** A8K9RV

**Contract Number:**

**D.O. Number:**

**Action Memo Date:**

**Response Authority:** CERCLA

**Response Type:** Emergency

**Response Lead:** EPA

**Incident Category:**

**NPL Status:** not listed

**Operable Unit:**

**Mobilization Date:** 08/05/2015

**Start Date:** 08/05/15

**Demob Date:** TBD

**Completion Date:**

**CERCLIS ID:**

**RCRIS ID:**

**ERNS No.:**

**State Notification:** 08/05/15

The La Plata County Sheriff issued an order closing the Animas River to all watercraft from the north County line (San Juan County, Colorado) to the south County line (at the Colorado/New Mexico State line) until further notice. Furthermore, all such watercraft must be removed from the Animas River within the locations cited above. The decision was made after consultation with the EPA, CDPHE, the San Juan Basin Health Department, and representatives of the Southern Ute Indian Tribe. The order will remain in effect until it is determined that the river is safe. **The Situation Report for tomorrow, Saturday Aug 15, will include a joint press release updating the status of the use of the Animas River.**

#### 1.1.1.1 Incident Category

#### 1.1.2 Site Description

The Gold King Mine near Silverton, Colorado is a historic gold mine at approximately 11,300' elevation. The mine has a continuous discharge of acidic mine drainage that is a significant contributor of manganese, zinc, copper, and cadmium into the Cement Creek drainage of the

Animas River watershed. The Gold King Mine has not had maintenance of the mine workings since 1991, and the workings have been inaccessible since 1995 when the mine portal collapsed.

The EPA Region 8 has been investigating the conditions to assess the on-going releases and incremental de-watering and removal of blockages to prevent blowouts.

**1.1.2.1 Location** - San Juan County, Colorado, La Plata County, Colorado, Southern Ute Indian Reservation and Ute Mountain Ute Tribe reservation.

#### **1.1.2.2 Description of Threat**

Mine waste water was released into Cement Creek and the Animas River. The volume of the release based on US Geological Survey (USGS) Cement Creek gaging station is estimated at three million gallons. The initial environmental concern was the pulse of contaminated water containing sediment and metals discharged in Cement Creek which flows into the Animas River through Durango, Colorado, and into New Mexico where it joins the San Juan River before flowing into Utah. The City of Durango relies on the Animas River as one of its main water sources - the Animas source is off-line. The river is also used for recreational purposes, including fishing and rafting, and is an important cultural resource for the Navajo Nation.

The leading edge of the release passed through Durango, Colorado, on Friday, August 7, 2015, and on August 8, 2015, it crossed the border into New Mexico where it eventually discharged into the San Juan River.

#### **1.1.3 Site Inspection Results**

Aerial and ground reconnaissance indicates that the plume associated with the Gold King Mine release has dissipated downstream and there is no leading edge of contamination visible in downstream sections of the San Juan River or Lake Powell.

The EPA is collecting and assessing water quality from Cement Creek and the Animas daily. Water sampling is occurring, and pH levels and dissolved concentrations of metals are being monitored.

### **1.2 Incident Objectives**

- **Continue private water well call tracking, follow up actions and owner communications.**
- **Continue sampling plan and develop strategy to evaluate and mitigate risks due to sediment in the river.**
- **Continue river assessment through sediment and water sampling.**
- **Continue management of adit discharge and develop call down verification (CDPHE).**

- Effectively communicate with public and stakeholders utilizing a multi-faceted communication strategy to dissemination results.
- Ensure health and safety of the public and response management personnel.
- Develop a means to assess the economic impact upon affected communities
- Coordinate with the Colorado Division of water and other stakeholders to assess and flush ditches.
- Provide water of appropriate quality for specified use.
- Continued coordination with the Department of Agriculture (including state and local veterinarians) and the Colorado Extension.
- Maintain stability of mine road to ensure access.
- Prepare for mine dump stabilization.
- Amend field sampling plan to include assessment of remote areas of the canyon, execute when ready.
- Develop a medium term groundwater assessment monitoring transition plan. Develop medium term river monitoring plan to provide notification, warning and understanding to the public on longer term basis.

### **1.3 Critical Resource Needs**

All resources are being tracked by the Resources Unit. Resources for the response continue to be ordered as needed to fill critical resource needs.

### **1.4 Strategic Considerations**

United group of specialist to advise policy makers.

## **2. Current Activities**

### **2.1 Operations Section**

#### **2.1.1 Response Actions to Date**

A Colorado Unified Command (UC) post in Durango was established on 8/7/2015 and expanded on 8/10/2015 to full staff levels. An EPA Unified Area Command (AC) was also moved to Durango on 8/10/15. The UC includes EPA, State of Colorado Office of Emergency Management (OEM), Southern Ute Indian Tribe, La Plata County, and San Juan Basin Health Department. The Ute Mountain Ute Tribe and San Juan County CO are also in regular communication with Unified Command. The EPA Regions 6 and 9 have established incident command posts in Farmington, New Mexico that cover New Mexico and the Navajo Nation response areas. A JIC was established 8/7/2015. It is providing support for both the UC and the AC.

The EPA initiated a water quality sampling effort on August 5, 2015, to assess the impacts of the release at the Gold King Mine. There were a total of 5 sampling teams deployed on Monday, 8/10/2015, three from the EPA Region 8 and two from Colorado Department of Health and the Environment (CDPHE). There were four river and 30-40 well water samples collected August 10, 2015. The EPA collected surface water quality samples from seven locations; two of these locations were on Cement Creek, and five of these were on the Animas River in Colorado. Well samples were also collected upon request. These locations were selected based on the

availability of an historical dataset for these locations. These analysis of these samples include pH, dissolved concentrations of metals, and operational milestones. **The CDPHE collected samples from sediment and water from the Animas River north of Durango to south of Durango. The focus was on public assess areas in relation to the ditch flushing.**

On Tuesday, samples from 19 of the 20 planned sediment sampling locations were completed by the EPA (contractor) sampling teams. No additional sediment samples were taken by the EPA on Wednesday 8/12/2015 **or Thursday 8/13/2015.**

Daily residential sampling is occurring.

**Residential Well Samples Collected as of 8/13/15: 26 (18 res wells, 1 duplicate, 7 surface water samples)**

**Total Residential Well Samples as of 8/13/2015: 110 samples (including QA samples)**

**Sediment Samples Collected 8/13/15: 12 (11 samples, 1 duplicate)**

**Total Sediment Samples To Date: 33 (including QA samples)**

A system to prioritize and track water well sampling is under development.

**As of 5:00 pm 08/13/15, the Call Center (970-385-8700) had received 68 additional calls for a total 659 calls. Of the calls received yesterday, 22 were for water well (private or agriculture) and 35 were general. The EPA 800 number has received 14 calls for Colorado.**

Bottle water shipments from local suppliers have been occurring daily and distributed as requested.

**The Animas Consolidated Irrigation Ditch and Reid Irrigation Ditch fully open and being used for irrigation.** A pilot test was conducted on the Animas Consolidated late day on 8/12/2015. The purpose of the test was to visually evaluate sediment transport conditions that would occur upon partially opening the control gate. Ferrous sediments were observed to have been deposited bank to bank in the channel as a result of the mine release. Field measurements of pH were generally over 7 .0 standard units. Conductivity at the downstream sampling location was monitored and dropped over the course of the test as increased flow reached the monitoring point. Dissolved oxygen was indicated to be greater than 7.0 mg/l during the test. **The water quality monitors remain in the ditches and no additional data has been pulled off of the units at this time.**

**Non-Potable water distribution as of end of day 8-13- 2015:**

**Total deliveries: 31 (many are repeat deliveries)**

**One New delivery only**

**91020 Gallons**

**Stakeholders:**

**Cattle & Horse Farms**

**Nursery**

Fish Hatchery/Fish Ponds  
Commercial organic produce farm  
Pumping and filtration from river to fill fish ponds.

Potable Water Delivery as of 8-13:

Total Deliveries: 9 (Repeats)

No New Deliveries.

58,200 gallons

Stakeholders:

Single Family Home cisterns.

Multiple family homes on neighborhood cistern.

**1120 cases of bottled water have been purchased to hand out to community.**

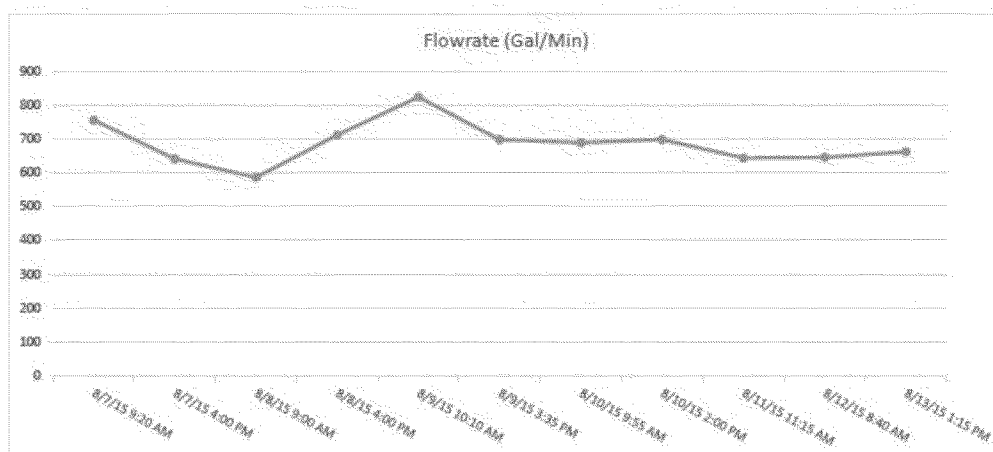
The CDPHE, and public water systems regulated by CDPHE in the impacted area, are taking raw and finished water samples to monitor water quality. CDPHE is coordinating with City of Durango drinking water treatment staff regarding the Animas River intake. It was not in use at the time of the event and has been off-line pending water quality assessment with CDPHE and completion of irrigation canal flushing.

CDPHE has 7 staff in area and continued collecting the Animas River surface water and sediment sampling. Also continued outreach to public water supply system operators.

Public system operators are continuing normal testing of their systems

The EPA continues to operate four treatment and sedimentation ponds at the mine site which are treating water by lowering acidity levels and removing dissolved metals. **A technical expert from CDPHE is assisting at the Gold King Mine site in optimizing the water quality treatment system.**

**Flow from the mine through the morning of 8/13/2015 is shown in the following chart. As of 11 am on 8/13/2015, there was no available updated water discharge data available.**



Treated water from the last treatment pond is discharging into Cement Creek at levels generally cleaner (higher pH and lower levels of metals) than pre-event, background conditions in the creek. Flow data out of the mine is being collected manually two times per day. Water quality data is being collected at the influent and effluent of the treatment system as well.

Colorado Parks & Wildlife officials monitoring the effects of the spill on terrestrial & aquatic wildlife. To date we have seen no indication of widespread fish mortality in the Animas or San Juan. Fish cages placed directly in the Animas River by the State of Colorado Division of Parks and Wildlife (CDPW) for two days indicate one mortality out of 108 fish tested. CDPW pulled the fish from the Animas on 8/11/2013 and they were preserved for necropsy and toxicity testing (tissue analysis). There was no additional fish mortality after the initial one fish mortality. CDPW is working to collect wild fish. The state of Utah has been sampling along the San Juan River in proximity to Lake Powell.

#### **2.2.1 Anticipated Activities**

Sampling of the seven data points on the river will continue. **CDPHE is adding a third sampling team south of Silverton conducting surface water sampling.**

**In response to requests from nine residents, one the EPA sampling teams will be working with the Southern Ute tribe sampling private drinking water wells.**

**Durango area operations are conducting more ditch survey work. Irrigation ditches in the southern area of the Animas in Colorado that had minimal staining will be flushing and potentially opening today.**

**The EPA is working with Bureau of Reclamation (BOR) on taking a sediment sample on 8/14/2015 at the intake to the Animas La Plata Nighthorse Reservoir.**

Sampling procedures and a sampling plan are being established and shared with all relevant parties to ensure consistency.

The EPA Region 8 is distributing bottled water to citizens, and both potable and non-potable water for livestock and other agricultural purposes, as needed.

#### **2.2.1.2 Next Steps**

#### **2.2.2 Issues**

### **2.3 Logistics Section**

**Credentialing and badging of UCP personnel started yesterday and is working. The phone application on system did not work with the computer on checking out personnel so manual corrections are being made. The phone app shows updates that the computer is not capturing.**

**Communications, phone lines and CAT lines have problems have been resolved at the ICP.**

### **2.4 Finance Section - No information at this time**

## **2.4.1 Narrative**

## **2.5 Other Command Staff**

### **2.5.1 Safety Officer**

As of Thursday August 14<sup>th</sup> end of day, there was a single medical related incident. As of this report, the individual has been released from emergency medical care and is in route back to her home office as originally scheduled. As the fatigue and stress continue to rise, please take the time to step back and anticipate, recognize, and evaluate your situation. The most important resource is our people so watch out for yourself and watch out for each other.

### **2.5.2 Liaison Officer**

The Colorado Department of Parks and Wildlife (CDPW) is monitoring effects on wildlife and aquatic life in the affected area.

The UC, other Colorado representatives, officials from the City of Durango and the Mountain States Institute (NGO) are coordinating and discussing parameters for opening the river to recreational use.

### **2.5.3 Information Officer**

The most recent public information statement and press release was issued the afternoon of August 13, 2015. It provided information about the flushing of the ditches.

### **2.5.4 Weather Forecast**

**Weather forecast for August 14 and 15, 2015:**

#### **DURANGO AREA**

##### **Today**

Isolated showers and thunderstorms after 3pm. Mostly sunny, with a high near 88. Calm wind becoming west around 5 mph in the afternoon. Chance of precipitation is 10%.

##### **Tonight**

Isolated showers and thunderstorms before 7pm. Partly cloudy, with a low around 56. West wind around 5 mph becoming north northeast after midnight. Chance of precipitation is 10%.

##### **Saturday**

Isolated showers and thunderstorms after 1pm. Mostly sunny, with a high near 87. North northeast wind 5 to 10 mph becoming west southwest in the afternoon. Chance of precipitation is 20%.

##### **Saturday Night**

Isolated showers and thunderstorms before 1am. Partly cloudy, with a low around 56. West northwest wind 5 to 10 mph becoming north northeast after midnight. Chance of precipitation is 20%

#### **SILVERTON AREA**

##### **Today**



Scattered showers and thunderstorms, mainly after 2pm. Mostly sunny, with a high near 73. Calm wind becoming west around 5 mph in the afternoon. Chance of precipitation is 30%.

**Tonight**

A 20 percent chance of showers and thunderstorms before 8pm. Partly cloudy, with a low around 42. West wind around 5 mph becoming calm in the evening.

**Saturday**

Scattered showers and thunderstorms, mainly after noon. Partly sunny, with a high near 71. Calm wind becoming west northwest around 5 mph in the morning. Chance of precipitation is 40%.

**Saturday Night**

A 20 percent chance of showers and thunderstorms. Mostly cloudy, with a low around 43. West wind around 5 mph becoming calm in the evening.

**3. Participating Entities**

**3.1 Area Command**

The EPA Region 8 is coordinating with the EPA Regions 6 and 9, the states of Colorado, New Mexico and Utah, the Southern Ute Tribe and the Ute Mountain Ute Tribe. The EPA Region 6 is working closely with the New Mexico Environment Department (NMED) to evaluate possible impacts in Mexico. The EPA Region 9 is working with the Navajo Nation to evaluate possible impacts to the Tribe. Potentially impacted water systems have been notified, and precautions are in place to ensure drinking water is protected. The EPA and NMED are providing assistance to community water systems and closely monitoring the situation.

The EPA Region 9 has contacted the Bureau of Indian Affairs regarding potential impacts to the Navajo Nation.

**3.2 Unified Command and Cooperating Agencies**

The UC includes EPA, State of Colorado Office of Emergency Management (OEM), Southern Ute Indian Tribe, La Plata County, San Juan Basin Health Department. The Ute Mountain Ute Tribe will likely join during the next operational period.

The City of Durango and the Ute Mountain Ute Tribe are involved through via their agency representatives. San Juan County is an Agency Administrator.

The EPA Region 8 is coordinating with Agency for Toxic Substances and Disease Registry (ATSDR) in response to public health concerns/questions associated with the mine waste plume. ATSDR has been in communication with local health officials at San Juan County Basin Health Department in Colorado. Public health questions should be directed to Chris Poulet, ATSDR.

**4. Personnel On Site**

| Gold King Mine Release 2015 |            |
|-----------------------------|------------|
|                             | 08/13/2015 |

| Group                                  | Number     |
|--|------------|
| EPA @ REOC                             | 24         |
| Contractors @ REOC                     | 1          |
| EPA in Field (R8)                      | 26         |
| Contractors in Field (R8)              | 25         |
| EPA Laboratory                         | 8          |
| Contractors Laboratory                 | 7          |
| USCG                                   | 14         |
| ERT                                    | 1          |
| <b>Subtotal EPA Region 8 Resources</b> | <b>106</b> |
| Colorado OEM                           | 3          |
| Southern Ute Tribe                     | 6          |
| La Plata County                        | 15         |
| San Juan County                        | 3          |
| CDPHE                                  | 10         |
| Southwest IMT                          | 6          |
| City of Durango                        | 12         |
| Durango Fire                           | 2          |
| San Juan basin Health Dept.            | 5          |
| Ute Mountain Ute Tribe                 | 1          |
| US Bureau of Reclamation               | 1          |
| US Bureau of Indian Affairs            | 1          |
| Grand Junciton Fire                    | 1          |
| Mountain Studies Institute             | 1          |
| ATSDR                                  | 1          |
| <b>Total</b>                           | <b>181</b> |

## 5. Definition of Terms –

ATSDR= Agency for Toxic Substances and Disease Registry

EPA = United States Environmental Protection Agency

CERCLA = Comprehensive Environmental Responsibility, Compensation and Liability Act

CDPHE = Colorado Department of Public Health and Environment

USGS = United States Geological Survey

UC = Unified Command (Comprised of Southern Ute Indian Tribe, La Plata County, San Juan Basin Health Dept, EPA, State of Colorado OEM)

UCP = Unified Command Post

AC = Area Command (Comprised of EPA Regions 6, 8 and 9)

NMED = New Mexico Environment Department

BIA = Bureau of Indian Affairs

BOR = Bureau of Reclamation

COEM = Colorado Office of Emergency Management

CDPW = Colorado Department of Parks and Wildlife  
SWIMT = South West Incident Management Team  
MSDS = Material Safety Data Sheet  
PPE = Personal Protective Equipment  
USCG = United States Coast Guard  
ERT = EPA Emergency Response Team  
REOC = EPA Regional Emergency Operations Center

**6. Additional sources of information** – <http://www2.epa.gov/goldkingmine>